



Newsletter

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Director's Note

Newsletter editor Jill Cadwallader died on 19 April 2002 after a determined struggle against cancer. I met Jill more than two decades ago at the Bermuda Biological Station. Impressed with her abilities, I enticed her off the island to help us bring IES science to a diverse audience of all ages. She did this exceedingly well, enjoying particularly being present when young children realized the excitement of the natural world and scientific discovery. Her death deprives us of a fine colleague and friend.

In February we welcomed Dr. Valerie T. Eviner to the Scientific Staff. Dr. Eviner was our top choice among an unusually large number of superb ecologists competing for this position and she is already hard at work establishing her research program. The lead article provides an introduction for this new staff scientist and her research interests.

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Eviner Joins Scientific Staff

Most young scientists find themselves playing a life-sized game of musical chairs as they begin their careers: college- *move!* graduate school- *move!* post-doctoral position- *move!* and then a job as an independent scientist in a research or teaching institution. Usually, each of these maneuvers happens in an orderly fashion, with plenty of time for the budding scientist to consider their options before making the next leap.

But, Dr. Valerie Eviner did not have the luxury of "plenty of time" to work with. As she was just finishing her PhD research at the University of California at Berkeley, and getting ready to start writing her dissertation, she found out that her dream job- something she thought would arrive years down the road, if ever- was open. Now. It was an assistant scientist position at the Institute of Ecosystem Studies.

The success of the Institute's first capital campaign, planned in the mid-1990s, had provided for an endowed chair, which made funds available for a new scientific staff position, the first in almost a decade.

Institute Director Dr. Gene E. Likens appointed a search committee, headed by Dr. Peter Groffman, to plan and execute the search for a new assistant scientist. Staff scientists wrote to colleagues at universities with strong ecology programs, asking them to identify potential candidates and encourage them to apply. This aggressive outreach supplemented the posting on the IES web site, and an advertisement in *Science* magazine, a journal with a broad international readership.

The efforts brought results, attracting 175 applications from an international pool of talented, bright ecologists, many already embarked on research programs at top universities. Others, like Valerie Eviner, were just nearing completion of their PhD training.

"It was simultaneously a delight to see so many strong candidates and an agonizing process to winnow the list to a short list and ultimately a handful to invite for interviews" said Groffman of the search committee challenge. "This

search involved the entire core scientific staff in the final stages," added Likens. "We are very pleased that Valerie accepted our offer and look forward to seeing her research evolve with that of others here."

Eviner's interest in ecology was sparked as an undergraduate at Rutgers University, where she majored in biology, with an emphasis on biomedical research. In 1992, she earned a place in the IES summer Research Experience for Undergraduates (REU) program. The program opened her eyes to the field of ecology and the intellectual satisfaction of a more collaborative scientific environment than she had experienced in biomedicine. Her undergraduate achievements led to acceptance into the Department of Integrated Biology at Berkeley, where her studies were supported by national and institutional fellowships.

At Berkeley, Eviner had a big project in mind: the effects of plants on ecosystems, from nutrient cycling to soil stability to microbe and animal populations. She investigated each effect with monocultures (plantings of a single

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Valerie Eviner, the newest member of the IES Scientific Staff

Lorna Kelly

Anatomy of a Drought

by Victoria Kelly

When does a “dry spell” become a drought? According to records at the Institute of Ecosystem Studies, we are in the midst of the driest 12-month period since we started measuring precipitation 14 years ago. Rain and snowfall from April 2001 through March 2002 fell 17 inches short of the 12-month average during this time. Perhaps a better comparison, though, is with the longer-term average precipitation at the Dutchess County Airport in Poughkeepsie, which dates back to 1949. Only one 12-month period was drier than the current one: April 1964 to March 1965. And that dry spell was right in the middle of a prolonged dry period running from 1962 to 1966 (that drought actually extended through the summer of 1966) - among the driest years in the 51-year record. Thus, our current dry spell is bad, but still hasn’t developed into a full-fledged drought like this earlier one.

According to the National Weather Service’s Climate Prediction Center, we need 3.39 inches above the normal monthly precipitation of 3.5 inches in order to end the current drought. However, as temperatures rise, evaporation of water increases and drought conditions worsen. So, while many of us enjoyed the unseasonably hot spell in mid-April, it only made matters worse. In our deciduous forest region, the leafing out of trees in the springtime marks a sharp increase

in the evaporation of water from the trees themselves, a process called transpiration. By summer, transpiration outpaces direct evaporation to become the primary pathway of water loss from the soil. This could greatly exacerbate the drought if adequate rainfall doesn’t arrive soon.

What will happen if we don’t get more rain?

Droughts produce a cascade of effects that impact entire ecosystems, including humans. While mild and short-lived drought conditions are of less concern, more severe and longer lasting droughts pose many serious consequences. Crop yields can decline, groundwater reserves and reservoirs can shrink, and in severe cases, wildfires become more likely and smaller streams, lakes and ponds can even dry up completely, forcing resident wildlife to adapt, migrate or die. What will happen to the reservoirs that provide water for distant communities such as New York City?

Because of the severity of these effects, and the long times required to mitigate against them, a series of drought declaration levels has been developed by government officials. Drought declarations are based primarily on day-to-day temperature and precipitation measurements, but also include factors such as stream flows, reservoir and lake levels,

groundwater water levels and well yields, soil moisture, and meteorological forecasts for the upcoming few months. In a drought watch, the first level of response, residents and businesses are asked to make voluntary efforts to conserve water. A drought warning, the second level, involves no mandatory restrictions for private individuals but water suppliers are asked to intensify their water conservation efforts and make plans to use emergency supplies if needed. Once a drought has reached the level of a drought emergency there are mandatory restrictions on all water use.

If conditions remain warm and we don’t get more than average rainfall over the coming weeks, we can expect the drought currently being experienced in the Hudson Valley to continue and probably worsen during the upcoming summer.

Eviner, continued from page 1

species) and polycultures (species combinations) to see how each species behaved with and without competition from other plants.

A “Sustainable Agroecology” summer course at the University of California at Santa Cruz pushed her research in a new direction: the interface of agriculture and ecology. Eviner spent the rest of her time at Berkeley using her own ecological research and that of colleagues to build what she calls an “ecological toolbox”.

The toolbox contains 26 plant species that farmers can use as tools to provide essential ecosystem services, decreasing their reliance on chemicals. Importantly, the toolbox also tells farmers about potential problems each plant can cause (like attracting a certain pest insect), and details management practices and environmental conditions that each plant thrives under.

Eviner was awarded the PhD in December 2001, and arrived at IES in February. Switching coasts, from west to east, means starting work with a new set of plant species and a very different growing season, but Eviner is looking forward to the challenge of developing an ecological toolbox for this region. As she continues to bridge the gap between ecology and agriculture, her research will offer a new set of more sustainable, lower-chemical management options to farmers.

PRECIPITATION

Month	Dutchess County Airport 1971-2000 average (mm)	IES 2001-2002 monthly (mm)	Deviation
Apr	94.98	32.26	-62.72
May	122.85	57.40	-65.44
Jun	94.39	125.22	30.83
Jul	121.55	60.71	-60.85
Aug	98.57	52.07	-46.50
Sep	92.18	136.14	43.97
Oct	88.10	9.65	-78.45
Nov	91.22	22.86	-68.36
Dec	81.03	48.26	-32.77
Jan	83.00	38.35	-44.65
Feb	65.39	29.72	-35.67
Mar	89.07	65.53	-23.53
Annual Total - mm	1122.33	678.18	-444.15
Annual Total - in	44.19	26.7 (60%)	-17.5 (40%)

In Memoriam: Jill Cadwallader

An elegant, bleached shark jawbone hangs in a second floor office window of Gifford House, a reminder of Jill Cadwallader's love of all things wild. A keepsake from Jill's time in public relations at the Bermuda Biological Station before she joined the staff of IES in the summer of 1985, the beauty and strength of the jawbone are among the many lasting reminders of these same characteristics in Jill that all of us cherished. Jill passed away on Friday, April 19, 2002, after a valiant struggle with cancer.

Jill's work in public information was invaluable to IES. For more than 16 years, every press release, every brochure and glossy report, every IES newsletter (and there were 99!), every informational sign, every tour arranged to suit a visiting dignitary or group, and every addition to the IES website emanated from or crossed her desk. She lived and breathed her role as the chief purveyor of public understanding of IES with tremendous zeal, insisting on the highest level of professionalism and scientific excellence in every facet of our public face. She cared deeply about enriching



Karen Hagan

others' lives with the fascination of science and nature, and had a gift for communicating scientific complexities in warm and compelling ways.

Jill has left a lasting legacy at IES that extends far beyond her print, graphical and electronic products. This legacy is etched in the caring and upbeat interactions she had with each of us, and the myriad ways in which she touched our lives ... hosting monthly lunches in Spanish, leading origami ecosystem activities for children, lending an empathetic ear for a co-worker's tribulations, patiently editing an intern's multiple drafts of his first newsletter article, tending orphaned office plants, organizing countless celebrations of birthdays and farewells. Those of us who were lucky enough to know and work with Jill every day enjoyed her spirited personality and wry wit, evidenced in her "wall of bloopers" displaying the many funny mail addresses received at IES (e.g., one from the National Science Foundation to "The Institute of Equal Systems Studies")

Jill loved children and animals, rainforests and roller coasters, red clothes and chocolate, cool music and warm weather – and she genuinely loved IES and its people. The Institute, and all of us in its extended community lost a true friend in Jill; may we carry her legacies large and small with us into the future.

Importance of Volunteers

In recognition of National Volunteer Week (April 21-27), IES honored its own volunteers with a dinner and award ceremony on April 25th. After a social hour and dinner in the Plant Science Building, the group of over 60 attendees - including IES staff, volunteer award recipients and their families - made their way to the auditorium for the award ceremony.

Volunteer Program Coordinator Susan Eberth opened the ceremony with a warm welcome to the volunteers and their families, and was followed by Director Dr. Gene Likens, who gave an overview and update on the Institute's various programs and the important role volunteers play in them. The guest speaker, IES Post Doctoral Associate Dr. Kathleen LoGiudice, gave an informative talk about medium size mammals whose very presence helps lower human Lyme disease

risk. Then volunteer supervisors presented awards to 27 volunteers in each of their programs. Six volunteers received awards for the 100+ hours of service to IES in 2001. The most prestigious award an IES volunteer can earn is the Lifetime Volunteer Award, for more than 15 years or 1000 hours of service. Since the inception of the Volunteer Program in 1977, eighteen lifetime volunteers have been honored. And this year, a new member joined this select group. For her 1018 hours of service to the Institute since 1993, Ms. Edith Keck received a beautifully engraved sterling silver picture frame for her award photo. Ms. Keck is now a part of the "permanent" IES family and will continue to be honored at each annual award ceremony.

For information about becoming an IES volunteer, pick up application flyers at the Ecology Shop or Plant Science Building - main



Jane Eberth

Edith Keck, receiving Lifetime Volunteer Award

reception area or contact Susan Eberth at Eberths@ecostudies.org or (845) 677-7600 ext. 316; or visit the IES Volunteer Program website at www.ecostudies.org/welcome/volunteer.html.

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CONTINUING EDUCATION

For information, or to request a catalog, call the Continuing Education office at 845-677-9643 or visit www.ecostudies.org/education/continuing.html. Spring and summer semester programs include:

Gardening

June 1 (4 sessions): **Native Plants**
June 15 (1 session): **Simply Roses**

Landscape Design

June 2 (1 session): **Contour Plans**
June 29 (1 session): **Ecological Alternatives to Lawns**

Natural Science Illustration

June 1: (2 sessions): **Garden Photography**

Excursions

June 23: **Wave Hill and The Cloisters**
June 26: **Mohonk Mountain House**

SATURDAY ECOLOGY PROGRAMS

Come to **free public programs** on the first Saturday of each month. Children age 6 and up are welcome with an accompanying adult. Pre-registration isn't necessary. If you have questions, call 845-677-7600 ext. 317 for information on upcoming programs:

June 1: Adventures in Geology - See a billion years of earth history revealed in the rocks and soils of the Institute's grounds.
June 14: The Life and Times of the Monarch Butterfly - Learn about the fascinating life cycle of the monarch.
August 3: Take a Peek at the Pond - Cary Pond is full of life! Come with us to explore the pond's edges and its waters - you might get a little wet! Programs are from 1 - 3 p.m. and begin at the Gifford House Visitor and Education Center. [Dress according to the weather for the outdoor programs.]

IES SEMINARS

Free **scientific seminars** are held on Fridays in the auditorium from September until early May. The fall schedule will be available in August..

THE ECOLOGY SHOP

New in the Shop ...loofah products...Brushkins animal figures...Jacob's Chimes Necklaces...**in the Garden Room** ... Circle Hoes...Rain Gel granules...plant chimes.
Senior Citizens Days: 10% off on Wednesdays

GREENHOUSE

The greenhouse is a year-round tropical plant paradise and a site for controlled environmental research. Spring highlights include scented geraniums. Popular scents among Pelargonium enthusiasts are apple, lemon, nutmeg, orange, rose, and strawberry. The greenhouse is open daily until 3:30 p.m. with a free permit (see HOURS).

HOURS

Summer Hours: April 1 - September 30

Public attractions: Mon.-Sat., 9-6, Sun. 1-6; closed public holidays. The greenhouse closes at 3:30 daily.

The Ecology Shop: Mon.-Fri., 11-5, Sat. 9-5, Sun. 1-5. (Please note: The shop is closed Mon.-Sat. from 1-1:30.)

Free permits are required and are available at the Gifford House Visitor and Education Center until one hour before closing time.

FERN GLEN TOURS

Native Plant Program Assistant Janet Leete leads **free tours of the Fern Glen** on Tuesdays at 11 a.m. and 2 p.m. Pick up your free visitor permit at the Gifford House beforehand (see hours).

GROUP TOURS

We offer guided tours of the Gifford Garden, Fern Glen or Greenhouse, for garden clubs, horticulturists, community groups, and other groups. Tours should be arranged four weeks in advance. For information on fees, or to make reservations call Ms. Luanne Panarotti at 845-677-7600 ext. 317.

VOLUNTEER OPPORTUNITIES

Call Ms. Susan Eberth at 845-677-7600 ext. 316 or visit www.ecostudies.org/welcome/volunteer.html.

MEMBERSHIP

Join the Institute of Ecosystem Studies. Benefits include subscription to the IES Newsletter, member's rate for courses and excursions, a 10% discount on IES Ecology Shop purchases, and participation in a reciprocal admissions program. Individual membership: \$40; family membership: \$50. Call the Development Office at 845-677-7600 ext. 120.

The Institute's Aldo Leopold Society

In addition to receiving the benefits listed above, members of The Aldo Leopold Society are invited guests at spring and fall IES science updates. Call the Development Office at 845-677-7600 ext. 120.

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65 Sharon Tpke. (Rte. 44A), Millbrook, N.Y.

... for education, general information and The Ecology Shop:

Institute of Ecosystem Studies
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Box R, Millbrook NY 12545-0178
Tel: 845-677-5359 • Fax: 845-677-6455

The Ecology Shop: 845-677-7600 ext. 309

Street address: Gifford House Visitor and Education Center, 181 Sharon Tpke. (Rte. 44A), Millbrook, N.Y.

... IES website:

www.ecostudies.org

For information on current IES public events and attractions, visit: www.ecostudies.org/welcome/ThisWeek.html.

For garden tips, visit: www.ecostudies.org/welcome/gardens.html.